



## THE FAMILY EURYPYGIDAE: A REVIEW

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AS with many neotropical bird groups, little has been published on the family of Sun-bitterns (Eurypygidae), and the findings of one author often seem to contradict the findings of another. It seems worth while, therefore, to summarize the various reports for the benefit of those bird students who are trying to complete our knowledge of neotropical ornithology.

The family consists of a single species, *Eurypyga helias*, in which are recognized three subspecies, *major*, *meridionalis*, and *helias*; these occupy tropical Central and South America from the Caribbean slopes of Guatemala southward to south-central Peru, eastern Bolivia, and northern and central Brazil, the southern limits being southern Goyaz and Piauh (Peters, 1934:215-216).

Sun-bitterns inhabit the dense tropical forests of the coast, as well as those of the interior (Cabanis, 1848:752), and are most commonly found along the wooded, muddy banks of rivers and smaller streams, around springs and ponds, and in boggy or swampy areas. In Venezuela, according to Delacour (1923:140), they are especially numerous along the smaller streams, "where they live on the mud, generally under the cover of trees." Cabanis (1848:752) reports that in British Guiana they frequent sunny places, particularly along the banks of rivers. Skutch (1946:453) observed a Sun-bittern walking "deliberately" over the surfaces of a steeply inclined rock face between two pools in a stream, picking small objects from among the rocks, and flying from boulder to boulder. The Sun-bittern is usually seen on the ground, but if disturbed it sometimes takes refuge in the lower branches of trees (Carriker, 1910:426). To combine the descriptions of various authors—the Sun-bittern is a slender, graceful bird, walking with slow, precise steps, body horizontal, and neck outstretched. Evans (1899:266) thought that it "probably flies but little"; Finn (1908:158) describes the flight as light and butterfly-like. Goudot (1843b:4) says of the flight that it is not like that of herons, but more rapid and more prolonged.

Sun-bitterns are not gregarious, and according to Cabanis (1848:752—British Guiana), they are found almost always singly, seldom in pairs. Carriker (1910:426—Costa Rica) states just the opposite, that they are almost always to be seen in pairs. The Penards (1908:193—Dutch Guiana) reported finding them either alone or in pairs.

Delacour (1923:140—Venezuela) says that Sun-bitterns are shy but not wild and that "one can very well watch them without disturbing them." Carriker (1910:426) states that they "are not very shy, but with caution can be approached quite closely." The Penards (1908:193) often found the birds standing in shallow water, frequently

dipping themselves; when approached too closely, the birds would fly a little distance away. They are easily tamed and apparently thrive in captivity (Knowlton, 1909:347); a Sun-bittern in the Sophia Zoological Garden lived for 17 years (Flower, 1938:221). Often these birds are kept as pets in houses and courtyards, where they consume numerous roaches, flies, and other insects (Taylor, 1864:95; Delacour, 1923:140).

The few published accounts of food habits indicate that the Sun-bittern is strictly carnivorous. Insects are the most commonly reported item of diet (Knowlton, 1909:348); Newton (1899:925) mentions small fishes as well. Waterton (1891:321) says that the Sun-bittern does not live upon fish, that flies and insects are its food, and that the bird captures them as a heron captures fish. The Penards (1908:193) describe the method of feeding on insects as careful stalking in which the bird, with neck drawn in, approaches its prey until sufficiently close, when it suddenly thrusts its bill forward and captures the insect. From the stomachs of two freshly killed specimens, Deignan (1936:188) took shrimp, crabs, and other small crustacea; Goudot (1843b:4) also found small crustacea in the two stomachs that he examined.

Sun-bitterns have a peculiar but striking habit of spreading and elevating the tail and expanding the wings so that the tail and wings together form an almost complete circle about the bird (Newton, 1899:925; Alexander, 1936:481, 482). This is part of a sort of dance, believed by Finn (1908:158) and Pycraft (1931:669) to be courtship display. Rusby (1933:175) observed this dance and gave a good description of it. He says that *Eurypyga* "inhabits the dense shrubbery, but seeks patches of bright sunshine to perform its acrobatic dances. The one I saw occupied a brilliant patch of sunshine some ten or twelve feet in diameter in the middle of the road. He ran rapidly around in a circle from right to left, with his right wing stretched upward, apparently as a restraint, enabling him to circle more rapidly and securely, and then reverse the movement. Then he leaped into the center of the space and hopped up and down, sometimes with both feet and then one at a time. He stretched his head upward as far as possible, and then suddenly brought it down close to the ground, at the same time arching his back. Besides these regular movements, he indulged in the most erratic series of leaps and capers imaginable. There was evidently no relation between these actions and any practical objective, such as securing food." Rusby attributed this dance, not to courtship, but to indulgence in pure delight.

The voice of the Sun-bittern has been described by Newton (1899:925) as a "plaintive piping," and Finn (1908:158) states that it is a metallic whistle and, in alarm, a grating hiss. The Penards (1908:193) describe the call as *foe foe foe* or *so-le r r r*, often accompanied by a rattling of the bill. According to Bates (1863:82), although the bird

is difficult to see because of its somber plumage and dark habitat, its hiding place is often betrayed by its note—a soft, long-drawn whistle.

According to the Penards (1908:194), the nest of the Sun-bittern “is sometimes on the ground, but usually placed in trees, about two or three meters from the ground; it consists of a mass of mud and dry leaves with a semicircular entrance at the side” [translated from the Dutch]. Goudot (1843a:1) says the nest is placed in marshy areas, built of mud on low intertwined branches, about five or six feet (*pieds*) above the ground. Skutch (1947:38) observed a nest March 26, 1945, in Costa Rica, located in a stream-side tree, about 20 feet above the ground and about 10 yards back from the water’s edge. It was a large, bulky, roughly globular structure, approximately 12 inches in diameter, precariously saddled on an apparently unbranched portion of an obliquely ascending limb about two inches in diameter. “It was composed of decaying leaves, stems, and other vegetation, a small amount of green moss, and apparently also some mud. In the top was a shallow depression lined with green leaves.”

The most complete account of the nidification of Sun-bitterns is that by Bartlett (1866:76) concerning a pair in the Gardens of the Zoological Society of London. These birds had been in the Gardens for about three years. Early in the month of May 1865 “they began to show signs of breeding, by carrying bits of sticks, roots of grass, and other materials about; they were constantly walking round the pond, evidently in search of materials to compose a nest, and appeared to try and mix wet dirt with bits of moss, etc. This suggested the idea of supplying them with wet clay and mud, which they at once commenced to use. After a short time they settled to make a nest on the top of a pole or tree about 10 feet from the ground, on which was fixed an old straw nest. Both birds carried up mud and clay mixed with bits of straw, roots of grass, etc. The sides of the nest were raised, and thickly plastered inside with mud.”

After completion of the nest, the female laid three eggs: The first, laid shortly after the nest was built, was found broken on the ground beneath the nest. Early in June a second egg was found in the nest. Of the incubation of this egg, Bartlett (p. 77) says, “The two birds were very attentive, and took turns at incubation, and in twenty-seven days the young bird was hatched (July 9th). On the following day I ventured to look at the young bird . . . it is certainly one of the prettiest young birds I ever saw. It is thickly covered with fine short tufts of down, and much resembles the young of Plovers and Snipes, with this addition, that the head and body was thinly covered with rather longer hairs than are to be seen in the former-mentioned birds. [The pattern of the downy young, as shown in Bartlett’s accompanying plate, is an intricate one of spots, stripes, and marbling.] The young bird remained in the nest and was fed regularly by both parents, the food consisting principally of small live fish, a few insects, etc. The

mode of taking its food was somewhat peculiar: it did not gape and call or utter any cry like most nestlings; but as soon as the old birds flew upon the nest with the food in their bills, the young one snapped or pecked it from them and swallowed it at once. The young bird remained in the nest twenty-one days, by which time its wings were sufficiently grown to enable it to fly to the ground. It was there fed as before, and never afterwards returned to the nest; it grew quickly, and at the end of two months was indistinguishable from the old birds. Early in August the old birds began to repair the nest, and added a fresh lining of mud and clay, and at the end of August laid a third egg. The male bird now appeared to attend to the duties of incubation with much greater care than his partner, who fed the now nearly full-grown young one; they, however, managed to hatch the second young bird on the 28th of September." Since the conditions in which these breeding activities took place were completely different from those of the Sun-bittern's natural haunts, it is not necessarily true that its activities in the wild would be the same.

As to the time of breeding: The Penards (1908:194) state that in Dutch Guiana, *E. helias* breeds during the season of the big rains (mid-May or June to July or August). Deignan (1936:188) took a pair of Sun-bitterns in Honduras on April 23, the male with "right testis greatly enlarged, the other only slightly so." The ovaries of the female were also greatly enlarged and contained a fully developed egg—lacking only the shell. Goudot (1843a:1) reported birds fairly well formed within the egg in August.

The Penards (1908:194), Stresemann (1934:770), and Goudot (1843a:1) report the number of eggs to be two, and there were two eggs in the nest discovered by Skutch (1947:38). Nehr Korn (1899:206) described the *Eurypyga* eggs in his collection as having a reddish clay-colored background with large uniformly distributed violet-gray spots underneath and sparse rust-brown spots above ("underneath" and "above" referring, not to the position of the spots on the oval of the egg, but to the depth of the spots within the shell); the shells are described as delicate and moderately glazed; the measurements: 44–45 × 34–35 mm. This description is similar to that given by the Penards (1908:194). The egg figured by Goudot (1843b:pl.38) seems to correspond in size but does not otherwise fit this description very closely. The general background color of this egg is between Pale Pinkish Cinnamon and Pinkish Buff. Large irregular spots and blotches, between Light Purplish Gray and Pale Purplish Gray, occur irregularly upon the larger end, along with somewhat smaller spots of Olive-Brown and Dark Bone Brown.\* Small spots of the last two colors are intermingled with the larger blotches and are scattered over the smaller end of the egg. The shape of the egg is nearly oval.

\* Capitalized color names are taken from Ridgway, 1912, "Color Standards and Color Nomenclature."

That the young are downy when hatched has been pointed out above. Chubb (1916:143) says young Sun-bitterns "differ from most young birds by gaining the adult plumage direct from the nestling down without passing through an intermediate stage." Another unusual thing is that—though hatched with the down of precocial birds—they remain in the nest and are fed there by the parents. Bartlett (1866:77—see above) and also Salvin and Godman (1903:334) report that the young are fed by the parents for some weeks. Stresemann (1934:770), however, says the young leave the nest within a few (possibly two) days.

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